

SNAPSIL™ RTV5223 ADHESIVE SEALANT

Description

RTV5220 series sealants are alkoxy neutral cure, one-component, ready to use silicone adhesive sealants exhibiting low modulus/high elongation that will maintain a strong bond even when exposed to extreme movement. RTV5220 series sealants are true neutral curing silicone sealants that release methyl alcohol during cure while exposed to atmospheric moisture at room temperature.

Key Features and Typical Benefits

- A non-corrosive curing process that does not produce exothermic heat or corrosive by-products. Can be used on most corrosion-sensitive electrical and electronic equipment with no adverse effect
- Low modulus/high elongation sealant with primerless adhesion to most metals, painted surfaces and plastics, including polycarbonate and acrylic.
- Compatible with most sensitive metals and plastics
- Withstands exposure to harsh environments such as chemical, ozone, moisture and weathering
- Good tear resistance
- Easy handling with no mixing, heating or solvent hazards
- Low odor cure by-product
- UL recognized component - file number E-36952
- Retain elastomeric properties at temperatures of -75 to 140 °F

Typical Physical Properties

<u>Property</u>	<u>Unit</u>	<u>Value</u>
Color		
RTV5222		White
RTV5223		Black
RTV5229		Gray
Typical Cured Properties		
Hardness, Shore A		26
Tensile Strength	MPa (psi)	2.6 (370)
Elongation	%	750
Typical Uncured Properties		
Specific Gravity		1.4
Application Rate	gms/min	185

Typical physical properties are average properties and should not be used as or to develop product specifications.

Typical Physical Properties, continued

<u>Property</u>	<u>Unit</u>	<u>Value</u>
Sag/Slump	mm (inches)	2.5 (0.1)
Tack-Free Time	hours	3
Tooling or Skin-over time, min	min	30
Cure time to depth of 3.2mm (0.125 inches)		24 hours
Typical Electrical Properties⁽¹⁾		
Dielectric Strength	kv/mm (v/mill)	16.5 (420)
Dielectric Constant (60 Hz)		3.9
Dissipation Factor (60 Hz)		.001
Volume Resistivity	$\Omega \cdot \text{cm}$	5.4×10^{15}

Typical physical properties are average properties and should not be used as or to develop product specifications.

⁽¹⁾ Information is provided for Customer convenience. These properties are not tested on a routine basis.

Potential Applications

The RTV5220 series are low modulus/high elongation, alkoxy neutral one-part silicone sealants designed for use with glass, ceramic, metals, and plastics. RTV5220 sealants are well suited when bonding materials with large thermal coefficient of expansion properties, and dissimilar materials.

Because they are one-part products, there is no mixing required. The sealant can be easily dispensed from simple bulk dispensing pumps or cartridges. Base/catalyst ratio control, static mixer maintenance, butterfly testing for mix uniformity, yield loss from base purging, and other activities/costs associated with two-part sealants are eliminated.

Processing Recommendations**Surface Preparation**

Primers are not typically required when using RTV5220 series sealants. This silicone series offers excellent adhesion to many substrates including most sensitive metals, painted surfaces and plastics. Primers are available for difficult to bond to substrates. SS4179 primer is recommended for most plastics and painted surfaces, and SS4004 and SS4044 are recommended for most metal substrates. Refer to Momentive Performance Materials product data sheet #1532 for more information on the above primers. Adhesion to all substrates should be periodically verified by the user during actual production. Momentive Performance Materials will conduct adhesion tests on submitted substrates on request.

Where adhesion is required, surfaces should be thoroughly cleaned with a suitable solvent such as naphtha, methyl ethyl ketone (MEK), or isopropyl alcohol (IPA) to remove dirt, oil and grease. The surface should be wiped dry before the solvent evaporates to effectively remove contaminants. Porous surfaces should be allowed to completely dry before sealant application.

Cure Cycle Time

The cure process begins with the formation of a skin on the exposed surface of the sealant and progresses inward through the material. At 22 °C (72 °F) and 50% relative humidity, the RTV5220 series sealants will form a surface skin which is tack free to the touch in approximately 2 hours. The RTV5220 series sealants typically may be tooled up to 30 minutes after application. A 3mm (1/8 inch) section will cure in approximately 24 hours. Full development of physical properties and adhesion of a 3mm (1/8 inch) section will take approximately 36 hours.

Always allow the maximum possible cure time available for best results. Since cure times progressively increase with the thickness, sealant depth should be limited to 6mm (1/4 inch) where possible. For applications requiring sealant thicknesses greater than ¼ inch, Momentive Performance Materials one component, addition cure or two component silicone rubber compounds are suggested. Higher temperatures and humidity will accelerate the cure process and lower temperatures and humidity will slow the cure process. Do not cure the sealant at or above 43 °C (110 °F) as bubbles may form in the sealant that may effect the overall physical properties and adhesion.

Packaging and Dispensing

RTV5220 series sealants are packaged in cartridges, pails and drums. Below the container sizes and weights are outlined:

CONTAINER	WEIGHT, kg (LBS)	VOLUME, L (gallons)
Cartridge	0.45 (0.99)	0.30 (0.084)
5 gallon pail	27.2 (60)	19.4 (5.12)
55 gallon drum	244.9 (540)	174.5 (46.1)

Note: Test data. Actual results may vary.

Sealants may be dispensed from caulking cartridges by using simple mechanical caulking guns or air operated guns. Air operated guns will allow greater control and application speed in addition to reducing worker fatigue. DO NOT EXCEED 45 PSI when using air powered caulking guns.

Bulk dispensing equipment/pumps are used to deliver material from 5 gallon pails and 55 gallon drums. Bulk dispensing equipment typically offers the most economical solution to sealant dispensing, however, initial investment is required. Pumps, hoses, and accessories should be designed for use with silicone sealants. For more information in selecting equipment, contact Momentive Performance Materials for assistance.

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Application Instructions

Refer to, and follow, the written instructions on the container and Material Safety Data Sheets.

- Use drop cloths to protect horizontal surfaces from excess sealant that may drop during tooling operations.
- Apply the sealant directly from the pail/drum using bulk dispensing equipment, or from caulking cartridges. Consult Momentive Performance Materials regarding suggested pumping equipment and procedures.
- Apply sealant by pushing the bead ahead of the nozzle and make sure that the entire cavity is filled. Air pockets or voids should always be avoided.
- Tooling may be accomplished with a dry putty knife or spatula made from stainless steel, aluminum, polyethylene, Teflon® or other suitably non-reactive materials. Tooling should be done neatly, forcing the sealant into contact with the sides of the groove to eliminate any internal voids and assure good surface contact. Do not tool with water or soap or detergent solutions. The use of water, soap, and/or detergent solutions often leads to surface contamination during application. Surface contamination is the leading cause of poor adhesion.

Clean Up and Removal

Un-cured sealant may be removed by scraping up the bulk of the material and following with successive wiping

with soft, dry rags or paper towels. Removal of sealant from fabrics and other absorbent materials is essentially impossible once the material has begun to skin over. Complete removal of wet sealant is also difficult but may be facilitated by repeated applications of various commercially available hand cleaners suitable for grease removal, followed by blotting with dry towels or rags. Test fabric in an inconspicuous location for appearance changes prior to using any cleaning agent. Read and follow use and warning instructions for cleaning agents prior to use.

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Product Safety, Handling and Storage

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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